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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,871	03/16/2001	Benjamin N. Eldridge	P70-US	7472

27520 7590 05/08/2002

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EXAMINER

GILMAN, ALEXANDER

ART UNIT	PAPER NUMBER
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2833

DATE MAILED: 05/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,871

Applicant(s)

ELDRIDGE ET AL.

Examiner

Alexander Gilman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment A filed 01/23/02.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 36, 43, 48, 51-56, 58 and 71-74 are rejected under 35 U.S.C. 102(b) as being anticipated by Loranger et al.

With regard to claims 36, 43, 48 and 58, Loranger et al (US Pat. No. 5,791,914) disclose an assembly comprising:

a contactor (5);

an interposer substrate (12) having first and second opposite sides with a first set of resilient contact elements on the first side and the second set of resilient contact elements

a base (15) supporting the semiconductor device (14);

a support (13).

With regard to claims 51-54 and 71-74, Loranger et al inherently disclose that contactor comprising integrated circuits for testing semiconductor device.

With regard to claims 55 and 56, Loranger et al inherently disclose (col. 1, lines 5-12) that the semiconductor device is a wafer or plurality of singulated dices.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-41, 60, 61, 65-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loranger et al in view Eldridge et al (US Pat. No. 5,974,662) and Eldridge et al (US Pat. No. 6,184,053)

With regard to claims 37-40, 43-47, 60, 61, 65-68, Loranger et al all of the limitations except for the interposer having :

the resilient contact structures formed lithographically (claims 37,38, 60);

the contact elements comprise a cantiliver beam (claims 39, 40, 61);

the resilient contact structures are offset in position from said second set of resilient contacts structures (claims 41, 62);

the electronic devices disposed on the substrate (claims 43-47, 65-68).

Eldridge et al (US Pat. No. 6,184,053) disclose the resilient contact structures, comprise a cantiliver beams and are formed lithographically (col. 3, lines 6-11).

Eldridge et al (US Pat. No. 5,974,662) disclose an interposer substrate (508) having first and second opposite sides with a first set (514, 516, col.27, lines 65-67) of resilient contact elements on the first side and the second set (514) of resilient contact elements;

the interposer having:

the contact elements comprising a cantiliver beam (524);

the resilient contact structures are offset in position from said second set of resilient contacts structures (Fig. 4 and (col. 28, lines 24-34));

the electronic devices disposed on the substrate (col. 28, lines 44-46).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Loranger et al interposer with the the electronic devices and the contacts as taught by Eldridge et al, as an design choice.

2. Claims 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loranger et al in view of Eldridge et al (US Pat. No. 5,974,662) and further in view of Khandros et al.

Eldridge et al (US Pat. No. 5,974,662) discloses all of the limitations except for the overtravel stops.

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Khandros et al (US Pat. No. 6,064,213) disclose the overtravel stops (114).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Loranger et al - Eldridge et al (US Pat. No. 5,974,662) with the overtravel stops as taught by Khandros et al (US Pat. No. 6,064,213), to control the travel length of the resilient contacts during the test.

3. Claims 42 and 63 rejected under 35 U.S.C. 103(a) as being unpatentable over Loranger et al in view of Eldridge et al (US Pat. No. 5,974,662) and further in view of Brozowski et al.

Loranger et al - Eldridge et al (US Pat. No. 5,974,662) discloses all of the limitations except for the flexible substrate.

Brozowski et al (Electronic Packaging & Interconnection Handbook, McGraw-Hill, 1997, Ch. 8) disclose (p. 8-5) the flexible substrate.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Loranger et al - Eldridge et al (US Pat. No. 5,974,662) with the flexible substrate, as taught by Brozowski et al, as an alternative design choice.

Response to Arguments

Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Gilman whose telephone number is (703) 305-0847. The examiner can normally be reached on Monday-Friday, 10:30 a.m. - 8:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (703) 308-2319. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7724 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.


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AG

May 6, 2002


GARY F. PARN
PRIMARY INVENTOR